

## Patent Claims

1. A coating made of a film (2) formed on the basis of at least one polymer material that contains at least one property-changing component embedded in the matrix of the polymer material, characterized by the fact that the film (2) is made up of several layer-like areas, at least one of which contains the property-changing component.
2. The coating in Claim 1, characterized by the fact that the individual layer-like areas are different in terms of the embedded, property-changing components and/or the polymer material used.
3. The coating in one of Claims 1 and 2, characterized by the fact that the concentration of the property-changing components embedded in a layer-like area varies in the direction of the layer thickness.
4. The coating in one of Claims 1 to 3, characterized by the fact that the individual layer-like areas are arranged one over the other following the surface contours of the basic material (1).
5. The coating in one of Claims 1 to 3, characterized by the fact that the individual layer-like areas are arranged next to one another following the surface contours of the basic material (1), whereby the dividing line extending between each two different areas runs crosswise to the surface contour of the basic material (1).
6. A coating, consisting of a synthetic film formed on the basis of at least one polymer material and an additive embedded in the matrix of the polymer material, characterized by the fact that the additive contains magnetizable particles.
7. The coating in Claim 6, characterized by the fact that the additive contains chromium dioxide as magnetizable particles.

8. The coating in Claim 6 or 7, characterized by the fact that the additive contains property-changing components.
9. The coating in Claims 6 to 8, characterized by the fact that the film is composed of several layer-like areas.
10. The coating in Claim 9, characterized by the fact that the individual areas are different in terms of the embedded additive and/or the polymer material used.
11. The coating in Claim 10, characterized by the fact that the concentration of embedded additive varies within a layer-like area.
12. The coating in at least one of the preceding Claims, characterized by the fact that it has a surface that is made up of layer areas lying in different planes.
13. The coating in Claim 12, characterized by the fact that lower layers, at least in areas, are exposed by stripping upper layers or covering lower layers when applying upper layers.
14. The coating in at least one of the preceding claims, characterized by the fact that the surface is structured.
15. A process for producing a coating, in which at least one polymer material, plus at least one property-changing component, is applied to the surface of a basic material to be coated and is crosslinked by then adding energy, characterized by the fact that the polymer material is applied forming layer-like areas depending on the property-changing component mixed in.

16. The process in Claim 15, characterized by the fact that the polymer material is blended with the property-changing component in one step and is applied to the surface to be coated.
17. The process in Claim 15, characterized by the fact that the property-changing component is added to the polymer material before it is applied to the surface to be coated.
18. The process in one of Claims 15 to 17, characterized by the fact that the polymer material is applied in liquid form.
19. The process in one of Claims 15 to 18, characterized by the fact that a combination of different polymer materials is used as the matrix material.
20. The process in one of the preceding claims, characterized by the fact that the crosslinking is done using an electrostatic field.
21. The process in one of the preceding claims, characterized by the fact that the crosslinking is done using wavelength-specific radiation.
22. The process in one of the preceding claims, characterized by the fact that the layer-like areas are made with different layer thicknesses.
23. The process for the production of a coating, in which the polymer material is applied to the surface being coated and is then polymerized by the effect of energy, characterized by the fact that an additive containing magnetizable particles is mixed into the polymer material to create a synthetic film that can be magnetized, at least in areas.
24. The process in Claim 23, characterized by the fact that the polymer material and the additive are applied in powder form.

25. The process in one of Claims 23 to 24, characterized by the fact that the polymer material is applied in liquid form.
26. The process in at least one of the preceding claims, characterized by the fact that by predetermining the layer thickness desired and knowing the amount to be applied and the time, the exact amount to be applied can be controlled with a path-time controller to achieve the predetermined layer thickness.
27. The process in one of the preceding claims, characterized by the fact that the thickness of the layers is measured without contact.
28. The process in Claim 27, characterized by the fact that the measurement of layer thickness is done using ultrasound.
29. The process in one of the preceding claims, characterized by the fact that the coating is done in such a way that no crosslinking takes place and by the fact that if a mistake is made, the layer applied is removed and the workpiece is recoated.
30. The process in one of the preceding claims, characterized by the fact that upper layers are stripped away to expose lower layers.
31. The process in one of the preceding claims, characterized by the fact that the surface is structured.
32. The process in Claim 31, characterized by the fact that the structuring is done before crosslinking, in any case before the final solidification during polymerization.

33. A device for producing a coating with an arrangement applying the polymer material to the surface being coated, characterized by the fact that a feed device is provided which mixes property-changing components with the polymer material.
34. The device in Claim 33, characterized by the fact that the feed device mixes the property-changing components with the polymer material synchronously with its application to the surface being coated.
35. The device in Claim 33, characterized by the fact that the feed device mixes the property-changing components with the polymer material before it is applied to the surface being coated.
36. The device in one of Claims 33 to 35, characterized by the fact that a control device is provided that has a measurement device and detects the type and amount of feed of property-changing components and gives off a signal corresponding to the type and/or the amount, and that compares this signal with a predetermined reference variable and if they are the same ends the feed.
37. The device in one of Claims 33 to 36, characterized by the fact that a feed device is provided which mixes the polymer material with an additive containing magnetizable particles.
38. The device in one of Claims 33 to 37, characterized by the fact that a magnetizing device is provided which selectively magnetizes magnetizable particles embedded in the matrix of the polymer material.
39. The device in one of the preceding claims, characterized by the fact that it has a control system for path-time control.
40. The device in one of the preceding claims, characterized by the fact that it has a device for measuring thickness without contact.

41. The device in Claim 40, characterized by the fact that it is an ultrasound thickness measurement device.
42. The device in one of the preceding claims, characterized by the fact that it has a unit for blowing off a coating that is applied.
43. The device in one of the preceding claims, characterized by the fact that it has a unit for stripping off upper layers and exposing lower layers.
44. The device in one of the preceding claims, characterized by the fact that it has a unit for structuring the surface of the coating.